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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/264,547	03/08/99	JONES T	09943/006001

QM12/0323

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EXAMINER	
WILSON, J	
ART UNIT	**PAPER NUMBER**
3732	7

DATE MAILED: 03/23/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/264,547	Jones et al.
Examiner	**Group Art Unit**
John J. Wilson	3732

☒ Responsive to communication(s) filed on *Mar 8, 1999* .

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *THREE* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *1-192* is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-192* is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____ .

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____ .

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-4, 7-10 and 15-192 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. A claim limited to only receiving data and manipulating the data to produce a new set of data, displayed or not, is directed to non-statutory subject matter.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 8, 9, 15-17, 121, 122, 170 and 171 are rejected under 35 U.S.C. 102(b) as being anticipated by Wu et al. Wu shows receiving a 3D data set, finding a component and creating a model of the component, column 7, lines 7-10. As to claim 9, see column 7, line 9. As to claims 15-17 and 122, see column 7, lines 7-10.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al in view of Poirier. Wu shows the steps described above, however, Wu does not show the use of X-ray or MRI to obtain data. Poirier teaches obtaining data using X-rays or an MRI, column 3, lines 12-20. It would be obvious to one of ordinary skill in the art to modify Wu to include using X-rays or an MRI as shown by Poirier in order to make use of art known ways to best gather needed data. As to claim 5, Wu does not show obtaining data by imaging a physical model. Poirier teaches obtaining data using a physical model, column 3, lines 57-63. It would be obvious to one of ordinary skill in the art to modify Wu to include obtaining data from a physical model as shown by Poirier in order to make use of art known ways to best gather needed data.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al in view of Andersson. Wu shows the steps described above, however, does not show data taken from a photographic image. Andersson teaches taking data from an image, column 2, lines 57-60. It would be obvious to one of ordinary skill in the art to modify Wu to include using a photographic image as shown by Andersson in order to make use of art known ways to best gather needed data.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al in view of Brandestini et al. Wu shows the steps described above, however, does not show data from directly imaging teeth. Brandestini teaches taking data from directly imaging teeth, column 2, lines 33-36. It would be obvious to one of ordinary skill in the art to modify Wu to include using direct imaging as shown by Brandestini in order to make use of art known ways to best gather needed data.

Claims 7, 19-74, 124-146 and 173-192 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al. Wu shows the steps described above. That the scanned data can be stored as a 3D volumetric representation is an obvious matter of choice in known imaging to one of ordinary skill in the art. The specific segmentation used is an obvious matter of choice in the desired site to be treated to the skilled artisan. The specific mathematical algorithm used to find the desired portion is an obvious matter of choice in known algorithms for segmentation of data to one of ordinary skill in the art.

Claims 10, 18 and 98-120 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al in view of Andreiko et al (238). Wu shows the steps described above, however, does not show the segment being gum tissue. Andreiko (238) teaches data for the gums, see Abstract. It would be obvious to one of ordinary skill in the art to modify Wu to include gum tissue as a component as shown by Andreiko (238) in order to treat the desired area of the mouth. The

specific segmentation used is an obvious matter of choice in the desired site to be treated to the skilled artisan. The specific mathematical algorithm used to find the desired portion is an obvious matter of choice in known algorithms for segmentation of data to one of ordinary skill in the art.

Claims 11-14, 75-97, 123, 147-169 and 172 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu et al in view of Andreiko et al (243). Wu shows the steps described above, however, does not show user selected boundary points. Andreiko (243) teaches user selection, see column 15, lines 56-68. It would be obvious to one of ordinary skill in the art to modify Wu to include user selection as shown by Andreiko (243) in order to better manipulate the desired regions. To use well known computer graphic tools for this manipulation is an obvious matter of choice in the use of known tools for a known result to one of ordinary skill in the art. As to claim 75, Wu teaches a 3D data set, however, does not show selecting based on an interproximal margin. Andreiko (243) teaches extracting the spacing between teeth. It would be obvious to one of ordinary skill in the art to modify Wu to include using the margins to manipulate data as shown by Andreiko (243) in order to better manipulate the desired regions. The specific features used to select data are obvious matters of choice in the intended region to treat to the skilled artisan. The specific segmentation used is an obvious matter of choice in the desired site to be treated to the skilled artisan. The specific mathematical algorithm used to find the desired portion is an obvious matter of choice in known algorithms for segmentation of data to one of ordinary skill in the art.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-192 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10-12, 30-43, 53, 58, 60, 67, 68, 73-76, 80 and 81 of copending Application No. 09/169,276. Although the conflicting claims are not identical, they are not patentably distinct from each other because the test of claim 1 of the application is held to be obvious in view of the rules of claim 10 of the '267 application. The specific portion modeled is an obvious matter of choice in the desired site to be treated to one of ordinary skill in the art.

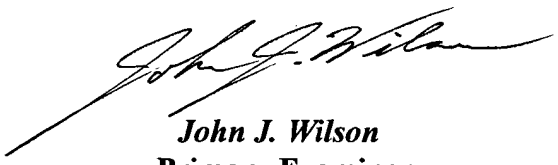
This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Drawings

The drawings filed March 8, 1999 have been approved.

Conclusion

Any inquiry concerning this communication should be directed to John Wilson at telephone number (703) 308-2699.



John J. Wilson
Primary Examiner
Art Unit 3732

jjw
March 21, 2000
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